



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

Docket No: Q57694

Nobuhito UEDA, et al.

Appln. No.: 09/485,820

Group Art Unit: 1616

Confirmation No.: 2221

Examiner: N. LEVY

Filed: February 16, 2000

For: ENVELOPED PESTICIDAL FORMULATIONS

**APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. § 1.192**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In accordance with the provisions of 37 C.F.R. § 1.192, Appellants submits the following:

**I. REAL PARTY IN INTEREST**

The real party in interest is Sumitomo Chemical, Limited of Osaka, Japan.

**II. RELATED APPEALS AND INTERFERENCES**

There are no related appeals and interferences.

**III. STATUS OF CLAIMS**

Claims 1 to 16 are all of the claims that have appeared in the application. Claims 2, 6, 9, 10, 13, 14, 15, and 16 have been cancelled, leaving claims 1, 3 to 5, 7, 8, 11 and 12 in the application. All of these claims have been rejected and are on appeal.

Thus, the claims that are on appeal are 1, 3 to 5, 7, 8, 11 and 12.

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**IV. STATUS OF AMENDMENTS**

There were no amendments to the claims that were presented after final rejection. Thus, all amendments have been entered.

**V. SUMMARY OF THE INVENTION**

The present invention is directed to a solid pesticidal formulation enveloped in a water soluble substance wherein the solid pesticidal formulation comprises at least one water soluble hydroxy compound selected from the group consisting of alkanols, ethylene glycol, propylene glycol, tri- or more valent alcohols, alcoholamines, lactic acid and hydroxyfatty acid esters. (Page 2, lines 6 to 11 and lines 20 to 24). The solid formulation is a formulation selected from wettable powders, water dispensible granules and water soluble formulations. (Page 9, lines 3 to 6).

Preferably, the solid pesticidal formulation enveloped in a water soluble substance is one in which the water soluble hydroxy compound is isobutyl alcohol, ethylene glycol, propylene glycol, butylene glycol, glycerin monoethanolamine, diethanolamine, triethanolamine, lactic acid or ethyl lactate. (page 2, lines 20 to 24).

**VI. ISSUES**

- A. Whether the Examiner erred in rejecting claims 1, 3, 7, 8, 11 and 12 under 35 U.S.C. § 102(e) as anticipated by Levy.
- B. Whether the Examiner erred in rejecting claims 1, 3 to 5, 7, 8, 11 and 12 under 35 U.S.C. § 103(a) as obvious over Murakami et al in view of JP 08-19803.

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**VII. GROUPING OF CLAIMS**

For issue A, the claims that are the subject of the rejection do not stand or fall together.

In particular, claim 3 does not stand or fall with the remaining claims.

**VIII. ARGUMENTS**

**A. The Examiner Erred in Rejecting claims 1, 3, 7, 8, 11 and 12 under 35 U.S.C. § 102(e) as Anticipated by Levy.**

Appellants submit that Levy does not disclose or render obvious the present invention and, accordingly, request reversal of this rejection.

The present invention, as set forth in claim 1, is directed to a solid pesticidal formulation enveloped in a water-soluble substance. The solid pesticidal formulation comprises at least one water soluble hydroxy compound selected from the group consisting of alkanols, ethylene glycol, propylene glycol, tri- or more valent alcohols, alcoholamines, lactic acid and hydroxy fatty acid esters. The solid pesticidal formulation is a formulation selected from wettable powders, water dispersible granules and water soluble formulations.

The patent to Levy is directed to controlled delivery or controlled release composition and process for treating organisms in a column of water or on land. Levy discloses at column 6, lines 33-36 (and also at column 6, lines 15 to 24) that the controlled release compositions can be placed within a dispenser such as a water soluble polyvinyl alcohol pouch having a continuous outer wall that envelopes the compositions of the Levy.

Levy discloses a wide variety of controlled release compositions, and describes a variety of components that can be present in a controlled release composition, but Levy nowhere discloses any examples of a solid pesticidal formulation enveloped in a water soluble substance,

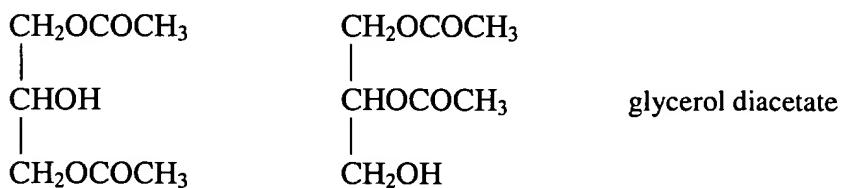
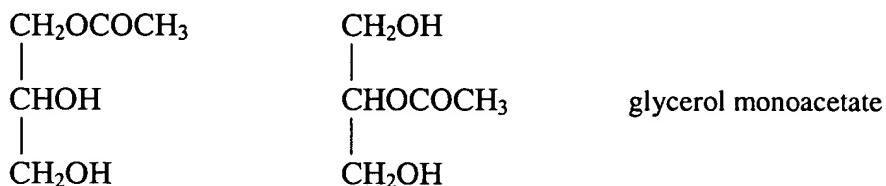
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where the solid pesticidal formulation comprises at least one water soluble hydroxy compound selected from the compounds set forth in claim 1, and where the solid pesticidal formulation is a formulation selected from wettable powders, water dispersible granules and water soluble formulations.

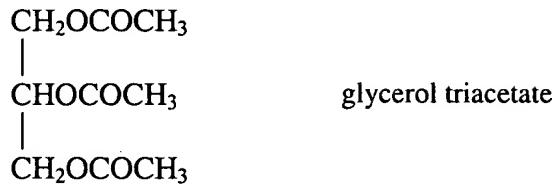
The Examiner has relied on the disclosures at column 10 for a teaching of coatings for the regulation of pesticidal release, column 11 for a teaching of specific compounds, and Example 1 of Levy. The Examiner has stated that column 11 of Levy lists glycerol monoacetate, diacetate and triacetate. The Examiner apparently consider these acetates to satisfy the recitations of the present claims.

Appellants submit that these acetates do not satisfy the recitations of claim 1.

In particular, glycerol monoacetate, glycerol diacetate and glycerol triacetate, upon which the Examiner relies, are the following compounds.



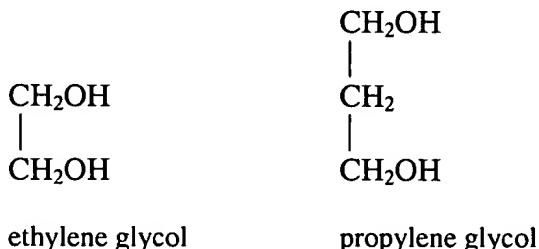
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On the other hand, the water soluble hydroxy compounds of the present claims are (1) alkanols, (2) ethylene glycol, (3) propylene glycol, (4) tri- or more valent alcohols, (5) alcoholamines, (6) lactic acid, and (7) hydroxyfatty acid esters.

In the water-soluble hydroxy compounds of the present claims, the (1) alkanols mean alkanes having one hydroxy group. The term "alkanol" is defined in Webster's Third-New International Dictionary, at page 54, a copy of which is enclosed herewith. The Dictionary defines alkanol as "an aliphatic alcohol (as methanol) regarded as derived from an alkane". The Dictionary also defines an alkane at page 54 as "any of a series of saturated aliphatic hydrocarbons  $\text{C}_n\text{H}_{2n+2}$  (as methane)". Namely, an alkanol is  $\text{C}_n\text{H}_{2n+1}\text{OH}$ , such as methanol, ethanol, propanol and the like in the present invention. Therefore, the glycerol mono-, di- or triacetate of Levy do not satisfy the requirement of an alkanol.

The following compounds are (2) ethylene glycol and (3) propylene glycol, respectively.



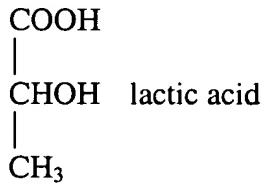
The glycerol mono-, di- or triacetate of Levy do not satisfy the requirements of ethylene glycol and propylene glycol.

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The (4) tri- or more valent alcohols of the present claims require three or more hydroxy groups. The number of hydroxy groups in one molecule of glycerol mono-, di- or triacetate is 2, 1 or 0, respectively. Therefore, the glycerol mono-, di- or triacetate of Levy are not tri- or more valent alcohols.

The (5) alcoholamines of the present claims require the presence of an amine group. The glycerol mono-, di- or triacetate of Levy do not have an amine group. Therefore, the glycerol mono-, di- or triacetate of Levy do not satisfy the (5) alcoholamines of the present claims which require the presence of an amine group.

The following compound is (6) lactic acid.



Therefore, glycerol mono-, di- or triacetate of Levy is not the lactic acid of the present claims.

The (7) hydroxyfatty acid esters of the present claims means an ester of a hydroxyfatty acid and an alcohol compound. It is a compound in which a hydroxy group exists on a fatty acid portion of the ester compound. Glycerol mono-, di- and triacetate are esters of acetic acid and glycerol. Since acetic acid is not a hydroxyfatty acid, the glycerol mono-, di- or triacetate of Levy do not satisfy the requirements of the (7) hydroxyfatty acid esters of the present claims.

Thus, none of the three compounds that the Examiner has identified at column 11 of Levy satisfy the requirements of the water soluble hydroxy compound of the present claims.

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In addition, the Examiner has stated that in Example 1 of Levy, although the Levy compounds are called coatings, they are admixed. The Examiner, however, did not identify any particular compound in Example 1 upon which he is relying.

With respect to the Examiner's reference to Example 1 of Levy, appellants do not see where Example 1 discloses a product that satisfies the recitations of claim 1, since there is no disclosure in Example 1 of a water soluble envelope that envelopes a solid pesticidal formulation containing a water soluble hydroxy compound.

With regard to Example 1 of Levy and the Examiner's statement that the Levy compounds in Example 1 are called coatings and are admixed, appellants have assumed the Examiner believes that the ethyl citrate or cetyl alcohol in Example 1 are the water soluble hydroxy compounds of claim 1, since these are the only compounds in Example 1 of Levy that are present in the coating other than the active ingredient.

Appellants point out, however, that the ethyl citrate in Example 1 of Levy is not a water soluble hydroxy compound of the present claims. According to the McGraw-Hill Dictionary of Scientific and Technical Terms (Fifth Edition) (a copy of a page of which was submitted with the Response Under 37 C.F.R. § 1.111 filed on November 21, 2001), "fatty acid" is defined as an "organic monobasic acid". Therefore, a hydroxyfatty acid ester of the present invention is an ester of a hydroxy-substituted organic monobasic acid with an alcohol, and does not include a hydroxytricarboxylic acid ester such as ethyl citrate.

A hydroxyfatty acid ester means a fatty acid ester whose one hydrogen atom that is bonded with a carbon atom is substituted by a hydroxy group, wherein the fatty acid is defined as

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"any of a series of saturated aliphatic monocarboxylic acids  $C_nH_{2n+1}COOH$  (as acetic acid or lauric acid)", as can be seen from the enclosed page 829 of Webster's Third New International Dictionary. Therefore, glycerol mono-, di and -acetate are not a hydroxyfatty acid ester of the present invention.

Further, the cetyl alcohol of the Examples in Levy is not water soluble. Appellants have submitted with the Response Under 37 C.F.R. § 1.111, filed on May 6, 2002, a copy of a page from Hawley's Condensed Chemical Dictionary, Fourteenth Edition, for cetyl alcohol, which discloses that cetyl alcohol is "insoluble in water". Therefore, the cetyl alcohol in Levy is not a water soluble hydroxy compound of claim 1.

Thus, even if one of ordinary skill in the art were to place the powders of Example 1 of Levy in a water-soluble envelope, one still would not arrive at the present invention because the powder of Example 1 of Levy does not contain a water soluble hydroxy compound as recited in the present claims.

The Examiner has stated that the claims only require the presence of a hydroxyl compound, and a powder or granule or some other water soluble solid form, and that a pesticide doesn't even have to be present. The Examiner has stated that Levy shows the coatings themselves can be pesticidally active.

In response, appellants submit that the Examiner has not correctly analyzed the recitations of the present claims. As set forth in claim 1, the present claims are directed to a solid pesticidal formulation, and therefore, of necessity, require the presence of a pesticide.

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Appellants point out that the specific water-soluble hydroxy compounds recited in claim 3 are not disclosed in Levy. Thus, appellants submit that claim 3 provides an additional basis for patentability over Levy, and that claim 3 does not stand or fall together with claims 1, 7, 8, 11 and 12.

In view of the above, appellants submit that Levy does not disclose or render obvious the presently claimed invention and, accordingly, request reversal of this rejection.

**B. The Examiner Erred in Rejecting Claims 1, 3-5, 7, 8, 11 and 12 have under 35 U.S.C. § 103(a) as Obvious Over Murakami et al in view of JP 08-19803.**

Appellants submit that these references do not disclose or render obvious the presently claimed invention and, accordingly, request reversal of this rejection.

The Murakami et al patent discloses a pesticidal composition comprising microcapsules, with each microcapsule encapsulating a solid organophosphorus compound. The microcapsules include a microcapsule wall made of polyurethane. The polyurethane is made by polymerization of polyvalent isocyanate and polyhydric alcohol compounds. Murakami et al disclose, at column 3, lines 38-45, that the polyhydric alcohol compounds for use in the formulation of the polyurethane microcapsule walls include various alcohols, such as, ethylene glycol, butanediol and glycerin. The Examiner has specifically identified these three compounds, as disclosed at column 3, lines 38 to 45. The Examiner's reference to column 3, lines 38-45 for a teaching of the use of ethylene glycol, butanediol or glycerin, however, relates to the use of these materials to form the wall material, that is, the envelope material, and does not satisfy the recitations of the present claims that the solid pesticidal formulation comprises at least one water soluble hydroxy compound.

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Thus, the Examiner is clearly in error concerning the teachings of Murakami et al.

Namely, the ethylene glycol, butanediol and glycerin, which the Examiner specifically relies on, are raw materials for a water-insoluble urethane. They react with isocyanate compounds to form urethane. Therefore, the Examiner's rejection is clearly based on an erroneous assertion that the ethylene glycol, butanediol or glycerin exist in Murakami et al in wettable powders, granules, etc.

In an Advisory Action dated May 20, 2002, the Examiner has also referred to the "propylene glycol" which is disclosed at column 5, second paragraph of Murakami et al. However, Murakami et al describe this compound as being an anti-freezing agent. An anti-freezing agent is utilized for an aqueous liquid formulation to prevent freezing. The present invention relates to enveloped solid formulation, and an anti-freezing agent is not added to solid formulations. Therefore, the present invention is not obvious over Murakami's description of propylene glycol as anti-freezing agent.

The Examiner also relied on the teachings of Murakami et al at column 4, lines 58 to 60. Murakami et al disclose, at column 4, last paragraph, lines 58 to 62 that the microcapsules can be formulated into various forms, such as a suspension concentrate, dusts, wettable powders, and granules. This description in Murakami et al of powders and granules are a mode of the microencapsulated pesticide. In contrast, the powders and granules in claim 1 of the present application are formulations to be enveloped. The substances in the microcapsules of Murakami et al are not wettable powders, water dispersible granules or water-soluble formulations.

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In summary, Murakami et al do not disclose or suggest a solid pesticidal formulation that comprises at least one water soluble hydroxy compound selected from the compounds set forth in claim 1, which is enveloped in a water soluble substance.

JP A 8-19803 only shows package formulations. It is clear that the disclosures of Murakami et al and JP '803 are very different from each other. Appellants submit that one of ordinary skill in the art would not be led to combining the teachings of these two references, and that there is no teaching or suggestion how such a combination could be made. Appellants submit that one could not easily combine the teachings. Further, even if such a combination were to be made, the resulting combination would not produce the present invention.

In view of the above, appellants submit that Murakami et al and JP '808 do not disclose or render obvious the presently claimed invention and, accordingly, request reversal of this rejection.

The present Brief on Appeal is being filed in triplicate. Unless a check is submitted herewith for the fee required under 37 C.F.R. §1.192(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Respectfully submitted,

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PATENT TRADEMARK OFFICE

Date: December 5, 2002

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APPENDIX

The claims on appeal are claims 1, 3 to 5, 7, 8, 11 and 12 and read as follows:

1. A solid pesticidal formulation enveloped in a water soluble substance wherein the solid pesticidal formulation comprises at least one water soluble hydroxy compound selected from the group consisting of alkanols, ethylene glycol, propylene glycol, tri- or more valent alcohols, alcoholamines, lactic acid and hydroxyfatty acid esters and the solid pesticidal formulation is a formulation selected from wettable powders, water dispersible granules and water soluble formulations.
3. The solid pesticidal formulation enveloped in a water soluble substance according to claim 1, wherein the water soluble hydroxy compound is isobutyl alcohol, ethylene glycol, propylene glycol, butylene glycol, glycerin, monoethanolamine, diethanolamine, triethanolamine, lactic acid or ethyl lactate.
4. The enveloped pesticidal formulation according to claim 1, wherein the water soluble hydroxy compound is glycerin.
5. The enveloped pesticidal formulation according to claim 1, wherein the water soluble hydroxy compound is ethylene glycol.
7. The enveloped pesticidal formulation according to claim 1, wherein the content of water soluble hydroxy compound is 0.1 to 40% by weight.
8. The enveloped pesticidal formulation according to claim 1, wherein the content of water soluble hydroxy compound is 2 to 20% by weight.
11. The enveloped pesticidal formulation according to claim 1, wherein the water soluble substance is a water soluble polymer.

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12. The enveloped pesticidal formulation according to claim 1, wherein the water soluble substance is a water soluble polyvinyl alcohol.



# Webster's Third New International Dictionary OF THE ENGLISH LANGUAGE UNABRIDGED

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fr. *F alizarine*, fr. *alizar* (fr. Sp. prob. fr. Ar *al-aṣārah* the juice, fr. *arasa* to squeeze) *n* : 1 : an orange or red crystalline compound  $C_6H_2O_2(OH)_2$  formerly prepared from madder and now made synthetically from anthraquinone that with different mordants produces on cotton the Turkey reds and other shades (as pink and chocolate) but that is used now more in making red pigments than in dyeing; 1,2-dihydroxy-anthraquinone — see DYE table I (under *Mordant Red 11*) 2 : any of a group of acid, mordant, and solvent dyes derived like alizarin proper from anthraquinone and used to produce various hues — see DYE table 3 : any of various dyes not derived from anthraquinone but somewhat similar to alizarin in dyeing properties

alizarine blue *n*, often cap *A&B* : any of various blue acid, mordant, and solvent dyes most of which are derived from anthraquinone — see DYE table I (under *Acid Blue* and *Solvent Blue*)

alizarine brown *n*, often cap *A&B* : ANTHRAGALLOL

alizarine carmine *n*, often cap *A&C&G* : an acid antraquinone dye derived from quinizarin that dyes wool and mordanted silk yellowish green to bluish green — see DYE table I (under *Acid Green 23* and *Solvent Green 3*)

alizarine lake *n*, often cap *A&L* : an organic pigment made from alizarin — see DYE table I (under *Lignite Red 33*)

alizarine red *n*, often cap *A&R* : any of various red mordant or acid dyes most of which are derived from anthraquinone: as a : TURKEY RED *1*; b : an orange-yellow crystalline compound  $C_6H_2Na_2O_2S$  used chiefly for dyeing and printing aluminum-mordanted wool scarf red, as a biological stain, and as an analytical reagent (as for detecting aluminum); sodium 3-alizarin-sulfonate, called also Alizarine Carmine, Alizarine Red S, Alizarine S; see DYE table I (under *Mordant Red 3*)

alizarine S *n*, often cap *A* : ALIZARINE RED b

alizarine saffron *n*, often cap *A&S* : either of two acid antraquinone dyes — see DYE table I (under *Acid Blue 43* & *45*)

alizarine yellow *n*, often cap *A&Y* : any of various mordant dyes not related chemically to alizarin but applicable by similar methods: as a : a monoazo dye made by coupling diazotized *m*-nitroaniline with salicylic acid — called also Alizarine Yellow 1G; see DYE table I (under *Mordant Yellow 1*) b : a monoazo dye made by coupling *p*-nitroaniline with salicylic acid and used chiefly as an acid-base indicator — called also Alizarine Yellow R; see DYE table I (under *Mordant Orange 1*) c : GALLACTOPHENONE — called also Alizarine Yellow C

al-ja-ma *n* [Ar. *al-jamā'*] at the assembly, congregation of people — more at *AMALOGA*: a Jewish congregation or community in medieval Spain; esp : a Jewish (sometimes Moorish) quarter, school, or synagogue

al-ja-ma-do *n* [Ar. *al-jamādū*] *n*, pl aljamados [Sp. *fr. aljama + -ado*] n. & adj. suffix (fr. *L -atus -ate*): an inhabitant of an aljama

al-ja-mi or al-ja-mi-ab *n* [Ar. *al-jamī'*] *n* -s [Sp *aljama*, fr. Ar *al-jamīyah* the non-Arab, barbarian] 1 : Spanish written in Hebrew or esp. Arabic characters 2 : the Arabic alphabet as adapted for writing Spanish

al-ja-mi-a-do *n* [Ar. *al-jamī'ah*] *n* *adj* [Sp, fr. *aljama + -ado*] : written in Spanish with Arabic characters (as *an ~ text*)

aljamiado *n* *s* [Sp, fr. *aljamiado*, adj.] : a work written in Spanish with Arabic characters

alk 'alk' or alk gum *n* -s [Ar. *lk resin*] : resin of Chian turpentine

alk- comb form [*alkyl*] : alkyl (*alkacrylic*) (*alkiodide*)

alk abbr alkaline

alka-comb form [*alkane*] : alkane (*alkadiyne*) (*alkapolyene*)

alka-di-en-e *n* [alka'dēn ī] *n* -s [alkali + *di - ene*] : DIOLEFIN

alka-di-en-y *n* [alka'dēn ī] *n* -s [alkadiene + *-y*] : a univalent aliphatic hydrocarbon radical containing two double bonds

alka-hest also al-ca-hest *n* -s [NL *alchhest*] : the universal solvent supposed by the alchemists to exist — al-na-hes-tic *n* -s [Ar. *alk* *ad*]

alkatengi *n* or ALKATENGI

alka-le-mi *n* [alka'le'mī] *n* -s [NL, fr. ML *alkali* + NL *emula*] : condition in which the hydrogen ion concentration in the blood is decreased

alka-les-cence *n* [alka'les'əns] *n*, also al-ka-les-cen-cy *n* -s [Ar. *alk* *les*] : alkaline property: quality or degree of being alkaline

alka-les-cent *n* -s [alkali + *-cent*] : tending to the properties of an alkali; slightly alkaline

alka-li *n* [alka'li] *n*, pl alkalies or alkalis *n* -z [often attrib. to ME, fr. ML *alkali*, *alkali*, fr. Ar *al-qili* the ashes of the plant saltwort] 1 a : a soluble salt obtained from the ashes of plants and consisting largely of potassium carbonate or (as from sea plants) of sodium carbonate b : a substance having marked basic properties like the above salts; esp : a hydroxide or carbonate of an alkali metal (as sodium or potassium) or less often of an alkaline-earth metal (as calcium) — see CAUSTIC ALKALI; compare BASE 8 2 : ALKALI METAL — used esp. in names of compounds (*~ cyanides*) 3 a : a soluble salt or a mixture of soluble salts (as the sulfates and chlorides of sodium, potassium, and magnesium) and the carbonates of sodium and potassium present in some soils of arid or semi-arid regions in quantity detrimental to ordinary agriculture (*~ soils*) b : a region in which the soil abounds in alkali alkali bee *n* : a common solitary bee (*Nomia melanderi*) important as a pollinator of alfalfa in the western U.S.

alkali blue *n* 1 : any of various alkali-soluble triphenylmethane dyes that are essentially sodium salts of monosulfonic acids of phenylated parosanilone and are used chiefly in making pigments — see DYE table I (under *Acid Blue 110*) 2 : any of the fairly permanent pigments made from an alkali blue dye and used chiefly in printing inks

alkal-i-cic *n* [alkal'i'kik] *n* [alkali + *-ic*] of igneous rocks : containing a comparatively large proportion of the alkalies sodium and potassium

alkali cellulose *n* : compound of cellulose with an alkali (as sodium hydroxide) formed during the mercerization of cotton and as the first step in the manufacture of viscose and cellulose ethers

alkali chlorosis *n* : a yellowing of the foliage of a plant caused by an excess of soluble salts in the soil

alkali disease *n* (so called fr. the belief that it was caused by alkaline water) 1 : tremors of cattle — compare MILK SICKNESS 2 : botulism of ducks — compare DUCK SICKNESS 3 : chronic sclerosis

alka-ili-ed *n* [alka'li'ed] *n* : affected with alkali disease 2 of grain or hay: containing selenium

alkali fast green 10 G *n*, usu cap *A&F&G* : an acid dye — see DYE table I (under *Acid Green 23*)

alkali feldspar *n* : feldspar containing alkali metals (as sodium or potassium or both) but little calcium

alkali flat *n* : a level area in an arid or semiarid region that is encrusted with salt or alkali (as the dried bed of an evaporated pond or lake)

alkali-fel *n* [alkal'i'fel, fr. 'alko-] *n* -s [alkali + *-fel*] *n* : to convert or change into an alkali: make alkaline

alkali grass *n* (so called fr. its growth in alkaline soil) 1 : a gramineous raceme (*Zygadenus elegans*) with flowers in a loose cylindrical raceme 2 : SALT GRASS a 3 : any of several grasses of the genus *Puccinellia* that grow in saline situations

alkali heart *n* (so called fr. its growth in alkaline soil and fr. its heartlike leaves) a : a California undershrub (*Frankenia grandifolia*) with revolute leaves, pinkish flowers in small terminal clusters, and linear many-seeded capsules

alkali lake *n* : a saline lake containing large amounts of sodium and potassium carbonates in solution as well as sodium chloride, commonly found in arid regions — called also soda lake

alkali marsh *n* : a low, whitish, scrubby, perennial herb (*Sida glomerata*) having roundish, or kidney-shaped, leaves and

measuring the strength or the amount of alkali in a mixture or solution 2 : an apparatus for measuring the amount of carbon dioxide (as that liberated from a weighed sample of carbonate-containing material by reaction with acid)

alka-li-me-tric *n* [alkal'i'mētrik] *adj* : relating to or involving alkalmetry

alka-li-met-ric *n* -s often attrib [blend alkali and metric] : any of a large group of thermoplastic thermosetting synthetic resins that are essentially polyesters made by heating polyhydric alcohols (as glycerol, ethylene glycol, or penterythritol) with polybasic acids or their acid hydrides (as phthalic anhydride, maleic anhydride, or sebacic acid) and used chiefly in making protective coatings characterized in general by their gloss, flexibility, and good weathering properties

alkyl 'alk'l *n* -s [prob. fr. G, fr. *alkohol* alcohol (fr. N *alcohol*) + *-yl*] 1 a : a univalent aliphatic radical  $C_6H_5$  (as methyl, ethyl) derived from an alkane by removal of one hydrogen atom b : any univalent aliphatic, aromatic, alicyclic hydrocarbon radical 2 : a compound one or more alkyl radicals with a metal (sodium ~s)

alkyl-a-mine *n* [alkal'i'mīn, -ī'mān, -lāmān] *n* -s [I: alkyl + amine] : an amine (as methylaniline) containing an alkyl attached to amino nitrogen

alkyl-a-mi-no *n* [alkal'i'mēnō, -kō'lāmānō] *adj* [alkyl-mine, fr. *alkylamine*] : of, relating to, or containing an alkylamine

alkyl-allyl sulfonate *n* : a salt of an alkyl-substituted aromatic acid — used chiefly commercially; see ANION DETERGENT 2

alkyl-ate *n* [alkal'i'ät] *n* -ED/-ING/-S [alkyl + -ate] : introduces one or more alkyl groups into (a compound)

alkyl-ate *n* -s [alkal'i'ät] *n* -s : a product of alkylation; esp., petrolyum refining : a mixture of liquid paraffins (as isoctane) of high antiknock value used as a blending agent for gasoline (as aviation gasoline)

alkyl-a-tion *n* [alkal'i'āshən] *n* -s : the act or process of kylating, esp. in petroleum refining : a process in which gaseous paraffins (as isoctane) are converted into higher branched-chain paraffins (as iso-octane) by reaction w

alkyl-ene *n* [alkal'i'en, -ēn] *n* -s [ISV alkyl + -ene] : exhibiting the alkaline state characteristic of lakes in arid regions — al-ka-lit-ro-phyl *n* [alkal'i'lītrōfīl] *n* -s : alkali weed *n* (so called fr. its growth in alkaline soil) : VERBA MANSA

alka-li-za-tion *n* [alkal'i'zāshən] *n* -s : ALKALINIZATION

alka-li-ze *v* -ED/-ING/-S [ALKALIZE, fr. alkali alkali (fr. ML) + -ize] : ALKALINIZER

alka-lio *n* [alkal'i'lō] *n* -s often attrib [G, fr. alkali + old i chem] : any of a large group of organic bases containing nitrogen and usu. oxygen that occur esp. in seed plants for the most part in the form of salts with acids (as citric, oxalic, or sulfuric acid), most of the bases being colorless and well crystallized, bitter tasting, complex in structure with at least one nitrogen atom in a ring (as pyrrole, quinoline, or indole rings), and biologically active, many of the bases or their salts being used as drugs (as morphine and codeine) (certain containing a number of closely related ~s) — al-ka-lio-lic *n* -s [alkal'i'lōlik] *n* -s : al-ka-lio-lic-try *n* -s [ISV alkaloid + -metry] 1 : the quantitative determination of alkaloids by chemical or other methods 2 : the administration of alkaloids according to an exact system of dosage

alka-lo-sis *n* [alkal'i'lōsēs] *n*, pl alkalo-ses *n* -s [NL, fr. ML alkali + NL *osis*] : a condition of increased alkalinity of the blood and tissues caused by excessive alkali intake or excessive loss of acid and resulting in muscular irritability and sometimes convulsions — opposed to *acidosis*

alka-loc-ic *n* [alkal'i'lok'ik] *n* : marked by the presence of or tendency toward alkalosis

alka-mi-né *n* [alkal'i'mēn] *n* -s [G *alkamin*, fr. alkohol alcohol + amin amine] : AMINO ALCOHOL

alka-nal *n* [alkal'i'nāl] *n* -s [alkane + aldehyde] : any aliphatic aldehyde (as decanal) regarded as derived from an alkane and containing the same number of carbon atoms as the alkane

alka-né *n* [alkal'i'nē] *n* [alkyl + -ene] : any of a series of saturated aliphatic hydrocarbons  $C_{2H_{2n+2}}$  (as methane) : PARAFIN 2

alka-net *n* [alkal'i'net] *n* -s [ME, fr. OSp *alcaneata*, dim. of *alcana*] 1 a : a European plant (*Alkantha tinctoria*) b : the root of this plant 2 : a red dyestuff prepared from alkane root and used similarly to alkanthin 3 : BUCCOON 1b

alka-na *n* [alkal'i'na] *n* [NL, fr. Sp *alcana* henna (shrub), fr. ML *alchanna*, fr. Ar *al-hinnā* the henna] 1 *cap* : a genus of herbs (family Boraginaceae) native to southern Europe with funnel-shaped flowers and pitted or wrinkled nutlets 2 also al-ken-na *n* -e *s* : HENNA 1

alka-ni-nū *n* [alkal'i'nū] *n* -s [ISV *alkann*] *n*, NL *Alkanna* *+* *-nū*] : a red crystalline coloring matter  $C_6H_2O_2$  obtained from alkanet and used chiefly in coloring beverages and fatty and oily pharmaceutical and cosmetic preparations

alka-no-ic acid *n* [alkal'i'ik, -ik] *n* [alkanol + -ic] : an aliphatic acid (as hexanoic acid) regarded as derived from an alkane and containing the same number of carbon atoms as the alkane

alka-not *n* [alkal'i'not] *n* : a compound of alkanol and ISV-on, orig. formed as G alkaption

alka-not-ur-ia *n* or alkap-ton-ur-ia *n* (, alkal'i'not'ōn, -tōn) *n* -s [ISV alkaptōn + ur-ia] : a rare metabolic anomaly in man marked by inability to complete the degradation of tyrosine and phenylalanine resulting in the presence of alkaption in the urine — al-kap-ton-ur-ic *n* [alkal'i'rik] *n* : al-ka-ryl *n* [alkyl + aryl] : an alkyl-substituted aryl radical (as ethyl-phenyl)

alka-ver-vir *n* [alkal'i'ver, vir] *n* [alkav'sir, vir] *n* -s [alkaloid + verb] : a preparation containing ester alkaloids obtained from a heliotrope (*Verbenum viride*) and used in treating hypertension

alka-ken-ge *n* also al-ka-ken-ge *n* [alkal'i'kenj] *n* -s [ME al-kenkengy, fr. ML *alkekengi*, fr. Ar *al-kākan*] the ground-cherry, fr. Per *kukunā*] : CHINESE LANTERN PLANT

alka-ken *n* [alkal'i'ken] *n* -s [ISV alkyl + -ene] : any of a series of aliphatic hydrocarbons  $C_{2H_{2n+2}}$  (as ethylene) containing a double bond: olefin

alka-ke-nyl *n* [alkal'i'nel, -ēl] *n* -s [alkene + -yl] : any univalent aliphatic hydrocarbon radical  $C_{2H_{2n+1}}$  (as 2-butene  $CH_2=CH-CH_2$ ) derived from an alkene by removal of one hydrogen atom

alka-ker-mes *n* [alkal'i'kermēz, -mēs] *n* -s : alkermes (now usw. alquermes) fr. Ar *al-qirmiz* the alkermes — more — at CRIMSON 1 obs : the kermes insect 2 : an orig. Italian liqueur made of brandy flavored with bay leaves, mace, nutmeg, cloves, and cinnamon and colored a brilliant red with the kermes insect or with cochineal

alka-kid *n* -kād *n* -s [alkyl + -ide] : a binary compound of an alkyl esp. with a metal (diethyl-zinc ( $C_2H_5)_2Zn$ ) so *~ zinc*

alka-kid *n* -kād *n* -s [alkene + -yl] : a binary compound of an alkene with a metal (diethyl-zinc ( $C_2H_5)_2Zn$ ) so *~ zinc*

alka-kid-yl *n* [alkal'i'kid'ēl, -ēdēl] *n* -s [alkyl + iodide] : a compound (as methiodide) with an alkyl iodide (as methyl iodide)

alka-ox-ide *n* [alkal'i'kox'īd, -ōdēd] *n* -s [alkoxy + -de] : a binary compound (as methoxide) of an alkoxyl; esp. a base formed from an alcohol by replacement of the hydroxyl hydrogen with a metal (as zinc, lithium, or barium)

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